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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,250	02/06/2004	Henry Allen Hill	114096.125 US2 (ZI-39)	8641
23483	7590	05/17/2005	EXAMINER	
WILMER CUTLER PICKERING HALE AND DORR LLP			ROJAS, OMAR R	
60 STATE STREET			ART UNIT	
BOSTON, MA 02109			PAPER NUMBER	

2874

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/774,250

Applicant(s)

HILL, HENRY ALLEN

Examiner

Omar Rojas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 28-35 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5-6, 8, 11-14, 23, 26, 27 and 36 is/are rejected.
- 7) ☒ Claim(s) 3, 4, 7, 9, 10, 15-22, 24 and 25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 0205.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☒ Other: Detailed Action.

## **DETAILED ACTION**

### ***Response to Amendment***

1. With regards to the amendment filed on February 11, 2005, all the requested changes to the claims and specification have been entered. Claims 1-36 are pending.

### ***Drawings***

2. The drawings were received on February 11, 2005. These drawings are acceptable.

### ***Information Disclosure Statement***

3. The prior art documents submitted by applicant in the Information Disclosure Statement(s) filed on February 11, 2005 have all been considered and made of record (note the attached copy of form(s) PTO-1449).

### ***Claim Rejections - 35 USC § 102***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. **Claims 1, 2, 5-6, 8, 11-14, 23, 26, 27 and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Patent No 6,597,721 to Hutchinson et al. (hereinafter "Hutchinson"), cited in a previous Office action.**

Regarding claims 1, 2, and 27, Hutchinson discloses a multiple source array (e.g., as seen in his Fig. 6) comprising: a guided-wave structure including a planar dielectric core 635, a first dielectric cladding layer 632 covering a first side of the dielectric core, and a second dielectric cladding layer 631 covering a second side of the dielectric core that is opposite from the first

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side; and an array of dielectric-filled, guided-wave cavities 510 in the first dielectric cladding 632 extending transversely from the dielectric core into the first dielectric cladding (see column 8, lines 13-17) and forming an array of apertures through which optical energy (640) that is introduced into the core exits from the core.

Regarding claims 5-6, see Hutchinson at column 21, lines 55-59.

Regarding claim 8, see Hutchinson at column 18, lines 24-27.

Regarding claim 11, see Figure 4 of Hutchinson.

Regarding claim 12, see Hutchinson at column 24, lines 61-67.

Regarding claim 13, light 640 is provided by a source.

Regarding claim 14, see Hutchinson at column 7, lines 13-24.

Regarding claims 23 and 26, see Hutchinson at column 7, lines 65-67.

Regarding claim 36, the resonant modes (i.e., "transmission modes") of the guided-wave cavities 510 couple to waveguide modes of core 635 during operation (see col. 3, lines 6-13).

***Allowable Subject Matter***

6. Claims 28-35 are allowed.

7. Claims 3, 4, 7, 9, 10, 15-22, 24, and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 3, 4, 7, 9, 10, 15-22, 24, and 25, each of the aforementioned claims recite patentable features over the prior art of record. For example, Hutchinson does not teach or suggest having a thickness of his first and second cladding layers (e.g., 631 and 632) such that leakage through the first and second cladding layers represent a negligible loss to the guided-wave modes as recited by claim 3. From the applicant's disclosure, such a limitation appears to have criticality to the claimed invention. Similarly, each of claims 4, 7, 9, 10, 15-22, 24, and 25 also comprise a combination of features not disclosed or suggested by the prior art.

Regarding claims 28-35, the primary reason for allowance of the claims is the inclusion of a multiple source array, comprising the claimed structure, and further providing an array of optical beams as input to an optical measurement instrument during operation as recited by independent claim 28. There is no hint or suggestion in Hutchinson that his invention may operate in this manner. Applicant has disclosed that such operation is useful for near-field microscopy, for example.

*Response to Arguments*

9. Applicant's arguments filed February 11, 2005 have been fully considered but they are not persuasive.

Applicant(s) argue that they "could find no teaching or suggestion by Hutchinson that any optical energy is meant to or does indeed exit through the PBG holes that in the one embodiment extend into the cladding [emphasis added]." See Page 11, the last paragraph, of the response filed February 11, 2005. It is first noted by the examiner that independent claim 1 does not call for guided-wave cavities that "extend into the cladding." Regardless, in the very next line of their response, the applicant(s) state that Hutchinson discloses "the likelihood that electromagnetic energy will escape through the cladding where the PBG features are located [emphasis added]." Thus, even the applicant(s) appear to admit that there is likelihood that optical energy will escape from the core where the PBG features are located in Hutchinson. In the examiner's view this is sufficient to meet the limitation of claim 1 that "light exits from the core."

Applicant(s) then quote a passage from Hutchinson in page 12 of their response. Obviously, if no electromagnetic energy will escape through the cladding where the PBG features are located, there would be no need for Hutchinson to suggest avoiding "localized refractive index inversion regions" as emphasized by applicant(s).

Applicant(s) then argue that they "could find no indication that the cavities to which the examiner refers were 'guided-wave cavities' as recited in the independent claims." See Page 12 of the response. It is first noted that the word "cavity" is synonymous with the word "hole".

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See, for example, the Merriam Webster on-line thesaurus at:

<http://www.merriamwebster.com/cgi-bin/thesaurus?book=Thesaurus&va=cavity>.

Hutchinson discloses that his PBG features “include[] a plurality of holes (col. 11, lines 4-8).” It is further apparent from figure 6 of Hutchinson that his PBG holes or cavities 510 are used to guide electromagnetic wave energy (i.e., light 640). Thus, the PBG features 510 disclosed by Hutchinson are considered “guided-wave cavities” at least in the literal meaning of those terms. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Therefore, the applicant’s arguments are not deemed persuasive.

### ***Conclusion***

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Omar Rojas whose telephone number is (571) 272-2357 and whose e-mail address is *omar.rojas@uspto.gov*. The examiner can normally be reached on Monday-Friday (7:00AM-3:00PM).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick, can be reached on (571) 272-2344. The official facsimile number for regular and After Final communications is (703) 872-9306. The examiner's RightFAX number is (571) 273-2357.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Omar Rojas  
Patent Examiner  
Art Unit 2874

or  
May 16, 2005

  
AKM ENAYET ULLAH  
PRIMARY EXAMINER